

AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions of the claims in the application:

Listing of claims:

1-23. (Cancelled)

24. (Currently amended) An arrangement ~~for visualizing~~ adapted to visualize molecules, movements of molecules, interactions between molecules, and molecular processes in a sample during use, by using ~~[[the]]~~ a single dye tracing (SDT) method, said arrangement comprising:

at least one source of light ~~for large-area fluorescence excitation~~ adapted to fluorescently excite, via single or multiple photon ~~absorption by~~ absorption, marker molecules in said sample during use;

a sample holder;

a ~~highly-sensitive~~ detection and analysis system comprising a charged coupled device (CCD) camera, ~~at least one of the sample, the sample holding means wherein at least one of the sample holder and the detection and analysis system being is~~ movable laterally, relative to ~~each the~~ other during ~~measuring use~~;

a control unit ~~for coordinating and synchronizing~~ adapted to coordinate and synchronize illumination times and lateral movement between ~~movements of at least one of said sample and said sample holding means~~ holder with and said sample detection and analysis system during use.

25. (Currently amended) An arrangement as set forth in claim 24, further defined as adapted to visualize ~~wherein said interactions between molecules and said molecular processes are~~ interactions between molecules and molecular processes in biological cells in a sample during use.

26. (Currently amended) An arrangement as set forth in claim 24, wherein said marker molecules ~~adsorbed via said single or multiple photon absorption on said molecules in said sample~~ are equal marker molecules.

27. (Currently amended) An arrangement as set forth in claim 24, wherein said marker molecules ~~adsorbed via said single or multiple photon absorption on said molecules in said sample~~ are different marker molecules.

28. (Currently amended) An arrangement as set forth in claim 24, wherein said control unit is further ~~used~~ adapted to coordinate and synchronize wave lengths during use.

29. (Currently amended) An arrangement as set forth in claim 24, wherein at least one of said sample holder and said detection and analysis system is movable both laterally and vertically relative to the other during use, and the control unit is further adapted to coordinate vertical movement between said sample holder and said detection and analysis system during use ~~movements of at least one of said sample and said sample holding means controlled by said sample control unit during measuring are lateral movements.~~

30. (Currently Amended) An arrangement as set forth in claim 24, wherein said at least one source of light is adapted to fluorescently excite areas in the range of 100 to 10,000 μm^2 during use ~~movements of at least one of said sample and said sample holding means controlled by said sample control unit during measuring are vertical movements.~~

31. (Currently amended) An arrangement as set forth in claim 24, wherein said control unit ~~further coordinates and synchronizes~~ is further adapted to coordinate and synchronize positioning and shifting of images to each sample position on a pixel array of said CCD camera during use.

32. (Previously presented) An arrangement as set forth in claim 24, wherein said at least one source of light is a laser.

33. (Previously presented) An arrangement as set forth in claim 32, wherein said laser is an acousto-optically switchable laser light.

34. (Currently amended) An arrangement as set forth in claim 24, wherein said at least one source of a light comprises ~~is selected from the group consisting of an argon laser, a dye laser~~ [[and]] or a two-photon fluorescence excitation laser.

35. (Currently amended) An arrangement as set forth in claim 24, wherein said control unit further comprises a pulse transmitter and a software ~~for controlling~~ adapted to control said at least one source of light and said movement of said sample holder during use.
36. (Previously presented) An arrangement as set forth in claim 24, wherein said CCD camera includes a frame shift mode and a continuous readout mode.
37. (Previously presented) An arrangement as set forth in claim 24, further comprising an epifluorescence microscope.
38. (Currently amended) An arrangement as set forth in claim 37, wherein said epifluorescence microscope has a collecting efficiency of fluorescence quanta of >3%, at 40- to 100-fold magnification during use.
39. (Currently amended) An arrangement as set forth in claim 24, further comprising an N₂-based cooling system ~~cooling means provided for~~ adapted to cool said CCD camera during use, said CCD camera having a large pixel array, a conversion of photons into electrons of from 0.8 to 0.9 in the optical range, a readout noise of only a few electrons per pixel at 1 μs/pixel readout speed, and at least one of << 1 dark counts/pixel x s and a lineshift rate of > 3 x 10⁵/s.
40. (Previously presented) An arrangement as set forth in claim 39, wherein said large pixel array is a pixel array of ≥ 1340 x 1300.
41. (Currently amended) An arrangement as set forth in claim 24, further defined as adapted to visualize a ~~wherein said sample comprises~~ comprising a molecule library prepared by combinatorial chemistry during use.
42. (Currently amended) An arrangement as set forth in claim 24, ~~wherein said sample comprises a plate selected from the group consisting of a~~ further defined as adapted to visualize a sample comprising a multi-well plate, a microtiter plate ~~and a nonotiter~~ or a nanotiter plate during use.
43. (Currently amended) An arrangement as set forth in claim 24, wherein said sample ~~holding means is~~ holder comprises a flowthrough cell.

44. (Currently amended) An arrangement as set forth in claim 24, wherein said ~~highly sensitive~~ detection and analysis system comprises a focussing plane movable step-wise along z direction by a piezo element during use.

45. (Currently amended) An arrangement as set forth in claim 37, wherein said epifluorescence microscope has a parallel beam region during use as said at least one source of light and comprises a galvano-optical mirror in said parallel beam region.

46-60. (Cancelled)

61. (New) An arrangement as set forth in claim 24, wherein both the sample holder and the detection and analysis system are movable laterally, relative to the other during use.